ASYNCHRONOUS TERMINAL DRIVER #2 (ATD02)
(24307B - REV. 1442)

BINARY TAPE	24307-16012
SOURCE TAPES	24307-18069 24307-18070
SOURCE LISTING	24307-19008

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0001                    ASMB,L,B,C
** NO ERRORS*
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0001                    ASMB,L,B,C
0003  00000                     NAM ATD02,6
0004                            ENT ATD02
0005                            ENT G1200
0006*******2APRIL74
0007                            EXT .ENTR,EXEC
0008*
0009*
0010*
0011*       CALLING SEQUENCE
0012*
0013*       JSB ATD02
0014*       DEF *+5
0015*        DEF LU             LOGICAL UNIT
0016*        DEF G1200          DUMMY
0017*        DEF LINE           BAUD RATE + LINE PLEX
0018*        DEF EXT            EQT EXTENSION ADDRESS
0019*       DEF EXT          EQT EXTENSIONA ADDRESS
0020*      (RETURN POINT) A=0=OK;A .NE. 0= INVALID REQUEST
0021*
0022*
0023*
0024*****************************************************************
0025*       EQT USAGE
0026*
0027*EQT12 = BYTE ADDRESS
0028*EQT13 = CHARACTER COUNT
0029*EQT14 = TRANSMISSION LOG
0030*EQT39 = FLAGS(BIT15=LF EXPECTED(READ),FILL IN PROGRESS(WRITE)
0031*                 BIT 0=TIMER IN PROGRESS,BIT1=ETX EXPECTED)
0032*EQT40 = TEMPORARIES
0033*EQT41 = OPTIONS(BIT 0=NOT USED,BIT 1=AUTO READ,BIT 2=MULTI-LINE
0034*                 BIT 3=TIMED INPUT BITS 15-8=TIME IN 1 SEC. INTERVAL)
0035*EQT42 = PREVIOUS CHAR. COUNT (PCC)
0036*EQT43 = LAST CHAR. O/P
0037*EQT44 = TRACE INDEX
0038*
0039*
0040*****************************************************************
0041  00000 000000  G1200 NOP
0042  00001 000000  LU    NOP
0043  00002 000000  HXXXX NOP           TERMINAL PARAMETER TABLE
0044  00003 000000  LINE  NOP           BAUD RATE+LINE PLEX
0045  00004 000000  IXT   NOP
0046*
0047  00005         ATD02 EQU *
0048  00005 000000        NOP
0049  00006 016001X       JSB .ENTR     GET PARAMETERS FROM CALLING
0050  00007 000001R       DEF LU        PROGRAM
0051  00010 066004R       LDB IXT
0052  00011 076120R       STB X1        SET EXTENSION ADDRESS FOR EXEC
0053  00012 044057        ADB P04$
0054  00013 062175R       LDA READ      SET
0055  00014 170001        STA B,I       ADDRESS
0056  00015 006004        INB           OF
0057  00016 062606R       LDA WRITE     ENTRY
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0058  00017 170001          STA B,I       POINTS
0059  00020 006004          INB
0060  00021 062125R         LDA CONTL
0061  00022 170001          STA B,I
0062  00023 047302R         ADB P15$      MOVE TO EQT39
0063  00024 002400          CLA
0064  00025 170001          STA B,I       CLEAR FLAGS
0065  00026 006004          INB           &
0066  00027 170001          STA B,I       COUNTERS
0067  00030 006004          INB
0068  00031 170001          STA B,I
0069  00032 062004R         LDA IXT
0070  00033 017253R         JSB SETQI     SET EQT ADDRESSES
0071  00034 163272R         LDA IQT18,I
0072  00035 067400R         LDB =D24      PRIME FOR TRACE TABLE
0073  00036 053401R         CPA =D27      TRACE SPECIFIED
0074  00037 006400          CLB           NO-CLEAR POINTER
0075  00040 177300R         STB IQT44,I   YES
0076  00041 162003R         LDA LINE,I
0077  00042 010062          AND P07$
0078  00043 043361R         ADA PLEX      CHECK FOR VALID LIN CONFIGURATION
0079  00044 160000          LDA A,I
0080  00045 050052          CPA N01$      VALID
0081  00046 026123R         JMP BAD       NO-ILLEGAL
0082  00047 033402R         IOR =B47      7 BIT CHAR, EVEN PARITY
0083  00050 173273R         STA IQT19,I
0084  00051 162003R         LDA LINE,I
0085  00052 001323          RAR,RAR       POSITION BAUD RATE
0086  00053 001300          RAR
0087  00054 013403R         AND =B17
0088  00055 073337R         STA RATE
0089  00056 001727          ALF,ALF
0090  00057 033337R         IOR RATE      INPUT&OUTPUT RATE ARE EQUAL
0091  00060 173274R         STA IQT21,I
0092  00061 063337R         LDA RATE
0093  00062 050054          CPA P01$      110 BAUD
0094  00063 026073R         JMP TLD1      YES
0095  00064 050056          CPA P03$      150 BAUD
0096  00065 026073R         JMP TLD1      YES
0097  00066 050060          CPA P05$      300 BAUD
0098  00067 026073R         JMP TLD1      YES
0099  00070 050064          CPA P09$      1200 BAUD
0100  00071 026073R         JMP TLD1      YES
0101  00072 026123R         JMP BAD       NO
0102  00073           TLD1  EQU *
0103  00073 063360R         LDA STOP      GET STOP BIT WORS
0104  00074 067337R         LDB RATE
0105  00075 007004          CMB,INB       9JAN74
0106  00076 001324          RAR
0107  00077 006006          INB,SZB       POSITION ACCORDING TO BAUD RATE
0108  00100 026076R         JMP *-2
0109  00101 167273R         LDB IQT19,I
0110  00102 000010          SLA           TWO STOP BITS
0111  00103 047404R         ADB =B200     YES
0112  00104 177273R         STB IQT19,I
0113  00105           TLD2  EQU *
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0114  00105 152001R        LDA LU,I
0115  00106 013405R        AND =B77
0116  00107 040067         ADA P64$
0117  00110 072001R        STA LU
0118  00111 063340R        LDA SPEC
0119  00112 173275R        STA IQT25,I  PASS ADDRESS OF SPECIAL CHAR, TAB
0120  00113 016002X        JSB EXEC     INITIALIZE
0121  00114 000121R        DEF *+5
0122  00115 000056         DEF P03$     CONTROL
0123  00116 000001R        DEF LU       INITIALIZE + LU
0124  00117 000053         DEF P00$     DUMMY
0125  00120 000120R X1     DEF *        EXTENSION ADDRESS
0126  00121 010074         AND RBYT$    PRESERVE STATUS
0127  00122 126005R        JMP ATD02,I
0128*
0129  00123           BAD  EQU *
0130  00123 060054         LDA P01$     INDICATE INVALID INITIALIZE
0131  00124 126005R        JMP ATD02,I
0132*
0133  00125 000126R CONTL  DEF *+1
0134  00126 000000         NOP
0135  00127 017177R        JSB SETQ
0136  00130 002400         CLA
0137  00131 017132R        JSB LOG      LOG TO TRACE TABLE
0138  00132 006021         SSB,RSS      INITIATE
0139  00133 026173R        JMP CNTL1    NO
0140  00134 006400         CLB
0141  00135 177323R        STB EQT14,I
0142  00136 163316R        LDA EQT9,I   GET REQUEST CODE
0143  00137 001727         ALF,ALF      ISOLATE FUNCTION
0144  00140 001222         RAL,RAL
0145  00141 010072         AND M77$
0146  00142 050055         CPA P02$     LINE OPEN
0147  00143 026160R        JMP CNTL5    YES
0148  00144 050056         CPA P03$     LINE CLOSE
0149  00145 026151R        JMP CNTL6    YES
0150  00146 053406R        CPA =B40     FUNCTION=4X
0151  00147 026154R        JMP CNTL7    YES
0152  00150 026170R        JMP CNTL4
0153  00151           CNTL6 EQU *
0154  00151 002400         CLA          CLEAR AUTO LF + AUTO READ OPTIONS
0155  00152 173333R        STA EQT41,I
0156  00153 026170R        JMP CNTL4
0157  00154           CNTL7 EQU *
0158  00154 163317R        LDA EQT10,I
0159  00155 013407R        AND =B177416
0160  00156 173333R        STA EQT41,I  SAVE FUNCTION CODE AS OPTION
0161  00157 126126R        JMP CONTL+1,I
0162  00160           CNTL5 EQU *
0163  00160 163317R        LDA EQT10,I  YES
0164  00161 006400         CLB
0165  00162 010056         AND P03$
0166  00163 173317R        STA EQT10,I  DONT ALLOW AUTO SPEED
0167  00164 050054         CPA P01$     LINE OPEN RCV?
0168  00165 067344R        LDB ETX      YES-INDICATE LINE ALREADY TURNED,
0169  00166 177335R        STB LCHAR,I
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0170  00167 006400          CLB
0171  00170 002400  CNTL4   CLA
0172  00171 036126R         ISZ CONTL+1  RETURN +2
0173  00172 126126R         JMP CONTL+1,I
0174  00173           CNTL1  EQU *
0175  00173 006400          CLB
0176  00174 026170R         JMP CNTL4
0177*
0178*
0179  00175 000176R READ    DEF *+1
0180  00176 000000          NOP
0181  00177 017177R         JSB SETQ
0182  00200 002404          CLA,INA
0183  00201 017132R         JSB LOG
0184  00202 006021          SSB,RSS       INITIATE
0185  00203 026246R         JMP READ1     NO
0186  00204           READC  EQU *
0187  00204 163335R         LDA LCHAR,I
0188  00205 017032R         JSB TURN      LAST CHAR=TURNAROUND?
0189  00206 026217R         JMP READH     YES
0190  00207 060056          LDA P03$      NO
0191  00210 173322R         STA EQT13,I   INDICATE "READ" TO WRITE LOGIC
0192  00211 002400          CLA
0193  00212 173331R         STA EQT39,I   CLR FLAGS
0194  00213 063344R         LDA ETX
0195  00214 173335R         STA LCHAR,I   SAVE LAST CHAR.
0196  00215 033373R         IOR B14$      INDICATE START WRITE
0197  00216 026322R         JMP READ5+1
0198  00217           READH  EQU *
0199  00217 016453R         JSB RSET      YES-RESET POINTERS
0200  00220 126176R         JMP READ+1,I
0201  00221 163333R         LDA EQT41,I
0202  00222 013410R         AND =B10
0203  00223 002002          SZA           TIMED INPUT?
0204  00224 026232R         JMP READN
0205  00225 006400          CLB
0206  00226 177331R         STB EQT39,I   CLR FLAGS
0207  00227           READP  EQU *
0208  00227 063372R         LDA B15$      INDICATE START READ
0209  00230 036176R         ISZ READ+1
0210  00231 126176R         JMP READ+1,I
0211  00232           READN  EQU *
0212  00232 064054          LDB P01$
0213  00233 177331R         STB EQT39,I   SET TIMER FLAG
0214  00234 163333R         LDA EQT41,I
0215  00235 001727          ALF,ALF       POSITION TIME VALUE
0216  00236 010074          AND RBYT$     ISOLATE 8 BITS
0217  00237 001000          ALS           X2
0218  00240 070001          STA B
0219  00241 001020          ALS,ALS       X8
0220  00242 044000          ADB A         X10
0221  00243 007007          CMB,INB,SZB,RSS
0222  00244 067411R         LDB =D-60     DEFAULT TO 6 SECONDS
0223  00245 026227R         JMP READP
0224*
0225  00246           READ1  EQU *
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0226  00246 016571R        JSB BITCK     CHECK STATUS
0227  00247 026357R        JMP READ2     TIMEOUT
0228  00250 026364R        JMP READ3     LINE ERROR
0229  00251 026450R        JMP READF     DATA ERROR
0230  00252           READG EQU *
0231  00252 000000          NOP
0232  00253 016560R         JSB TMCK      CHECK TIMER
0233  00254 063305R         LDA SAVA
0234  00255 070001          STA B         SAVE SPEC. CHAR FLAG
0235  00256 005700          BLF
0236  00257 013412R         AND =B177
0237  00260 073305R         STA SAVA
0238  00261 006020          SSB           SPECIAL CHAR.?
0239  00262 026277R         JMP READR     NO
0240  00263 053342R         CPA NULL      NULL CHAR?
0241  00264 026321R         JMP READ5     YES-IGNORE IT
0242  00265 053344R         CPA ETX       END OF INPUT?
0243  00266 026366R         JMP READ4     YES
0244  00267 053350R         CPA LF        LINE FEED?
0245  00270 026325R         JMP READJ     YES
0246  00271 053356R         CPA RUB       NO-RUBOUT
0247  00272 026414R         JMP READ6     YES
0248  00273 053343R         CPA CTRLA     CONTROL A
0249  00274 026424R         JMP READ7     YES
0250  00275 053351R         CPA CR        NO,CARRIAGE RETURN
0251  00276 026315R         JMP READ8     YES
0252  00277           READR EQU *
0253  00277 167322R         LDB EQT13,I   14DEC73
0254  00300 006003          SZB,RSS       BUFFER FULL          14DEC73
0255  00301 026321R         JMP READ5     YES-WAIT FOR TERM.   14DEC73
0256  00302 167331R         LDB EQT39,I   NO
0257  00303 006020          SSB           LINEFEED EXPECTED
0258  00304 026321R         JMP READ5     YES
0259  00305 005310          RBR,SLB       ETX EXPECTED?
0260  00306 026321R         JMP READ5
0261  00307           READK EQU *
0262  00307 016523R         JSB PUT       STORE CHARACTER
0263  00310 000000          NOP           14DEC73
0264  00311 063305R         LDA SAVA
0265  00312 017032R         JSB TURN      LAST CHAR = TURNAROUND?
0266  00313 026366R         JMP READ4     YES
0267  00314 026321R         JMP READ5     NOT DONE
0268  00315           READ8 EQU *         DONE
0269  00315 026321R         JMP READ5     14DEC73
0270  00316           READI EQU *         14DEC73
0271  00316 163331R         LDA EQT39,I
0272  00317 033372R         IOR B15$      SET LF FLAG
0273  00320 173331R         STA EQT39,I
0274  00321 002400  READ5   CLA
0275  00322 067307R         LDB TIME
0276  00323           READE EQU *
0277  00323 036176R         ISZ READ+1
0278  00324 126176R         JMP READ+1,I
0279  00325           READJ EQU *
0280  00325 163331R         LDA EQT39,I
0281  00326 001665          ELA,CLE,ERA   CLEAR LF EXPECTED FLAG
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0282  00327 173331R        STA EQT39,I
0283  00330 163323R        LDA EQT14,I
0284  00331 153334R        CPA PCC,I     ANY CHANGE?
0285  00332 026350R        JMP READM     NO-RECORD SEPERATOR NOT NEEDED
0286  00333 173334R        STA PCC,I
0287  00334 163333R        LDA EQT41,I
0288  00335 010057         AND P04$
0289  00336 002003         SZA,RSS       MULTI-LINE OPTION SELECTED?
0290  00337 026344R        JMP READL     NO
0291  00340 137334R        ISZ PCC,I     ACCOUNT FOR RECORD SEPERATOR
0292  00341 000000         NOP
0293  00342 063357R        LDA RS        PACK RECORD SEPERATOR
0294  00343 026307R        JMP READK
0295  00344 163331R READL  LDA EQT39,I
0296  00345 030055         IOR P02$      SET ETX EXPECTED FLAG
0297  00346 173331R        STA EQT39,I
0298  00347 026321R        JMP READ5
0299  00350          READM EQU *
0300  00350 002003         SZA,RSS
0301  00351 026321R        JMP READ5
0302  00352 163333R        LDA EQT41,I
0303  00353 010057         AND P04$
0304  00354 002003         SZA,RSS       MULTI-LINE OPTION
0305  00355 026344R        JMP READL     NO-GO EXPECT ETX
0306  00356 026321R        JMP READ5     YES
0307  00357          READ2 EQU *
0308  00357 002021         SSA,RSS       LINE ERROR
0309  00360 026437R        JMP READD     NO
0310  00361 060057         LDA P04$      SET LINE ERROR STATUS
0311  00362 016551R        JSB STAT
0312  00363 026432R        JMP READX
0313  00364          READ3 EQU *
0314  00364 017120R        JSB ERRL      PROCESS LINE ERROR
0315  00365 026321R        JMP READ5
0316  00366          READ4 EQU *
0317  00366 163331R        LDA EQT39,I
0318  00367 010050         AND N03$      CLEAR ETX EXPECTED FLAG
0319  00370 173331R        STA EQT39,I
0320  00371 163323R        LDA EQT14,I
0321  00372 002003         SZA,RSS       LOG ZERO
0322  00373 026204R        JMP READC     YES-CONTINUE INPUT
0323  00374 060057         LDA P04$       /                      4/2/74
0324  00375 173322R        STA EQT13,I    /TURN LINE AROUND      4/2/74
0325  00376 002400         CLA            /                       4/2/74
0326  00377 173331R        STA EQT39,I    /                      4/2/74
0327  00400 173332R        STA EQT40,I    /                      4/2/74
0328  00401 063342R        LDA NULL       /                      4/2/74
0329  00402 173335R        STA LCHAR,I    /                      4/2/74
0330  00403 033373R        IOR B14$
0331  00404 026322R        JMP READ5+1    /                      4/2/74
0332  00405 167320R READ9  LDB EQT11,I   NO
0333  00406 006020         SSB           WORD COUNT SPECIFIED
0334  00407 026412R        JMP *+3       NO
0335  00410 002004         INA           COUNT PARTIAL WORDS
0336  00411 031100         ARS           YES- CHAR COUNT/2
0337  00412 173323R        STA EQT14,I
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0338  00413 126176R        JMP READ+1,I
0339  00414           READ6 EQU *
0340  00414 163323R        LDA EQT14,I
0341  00415 003004         CMA,INA
0342  00416 143334R        ADA PCC,I     COMPUTE DIFFERENCE SINCE LAST LF
0343  00417 002003         SZA,RSS       ANYTHING TO DELETE?
0344  00420 026321R        JMP READ5     NO-BYPASS FORCING LF
0345  00421 002020         SSA
0346  00422 016502R        JSB BACK      BACK UP ONE LINE
0347  00423 026316R        JMP READI     14DEC73
0348  00424           READ7 EQU *
0349  00424 163323R        LDA EQT14,I
0350  00425 153334R        CPA PCC,I     ANYTHING TO DELELTE?
0351  00426 026321R        JMP READ5     NO
0352  00427 060052         LDA N01$
0353  00430 016502R        JSB BACK      BACK-UP POINTER
0354  00431 026321R        JMP READ5
0355  00432 163323R READX  LDA EQT14,I
0356  00433 026405R        JMP READ9
0357  00434           READB EQU *
0358  00434 062607R        LDA WRITE+1
0359  00435 072176R        STA READ+1    SAVE RETURN ADDRESS
0360  00436 026204R        JMP READC     NO-REINITIATE
0361  00437           READD EQU *
0362  00437 163333R        LDA EQT41,I
0363  00440 013410R        AND =B10
0364  00441 002002         SZA           TIMED INPUT?
0365  00442 026445R        JMP READQ     YES
0366  00443 017060R        JSB OK        CLR TIMER BIT + INDICATE NOP
0367  00444 026323R        JMP READE
0368  00445           READQ EQU *
0369  00445 060055         LDA P02$
0370  00446 016551R        JSB STAT      INDICATE TIMEOUT
0371  00447 026432R        JMP READX
0372  00450           READF EQU *
0373  00450 063303R        LDA P16$
0374  00451 016551R        JSB STAT      INDICATE PARITY ERROR
0375  00452 026252R        JMP READG
0376*
0377  00453           RSET  EQU *
0378  00453 000000         NOP
0379  00454 002400         CLA
0380  00455 016551R        JSB STAT      CLEAR POSSIBLE PARITY ERRORS
0381  00456 163317R        LDA EQT10,I
0382  00457 001200         RAL           CONVERT TO CHARACTER ADDRESS
0383  00460 173321R        STA EQT12,I
0384  00461 163320R        LDA EQT11,I
0385  00462 002003         SZA,RSS       ZERO LENGTH BUFFER
0386  00463 026477R        JMP RSET1     YES-ERROR
0387  00464 002020         SSA           NO,CHARACTERS SPECIFIED
0388  00465 026470R        JMP RSET2     YES
0389  00466 001000         ALS           NO-CONVERT WORD COUNT
0390  00467 003004         CMA,INA
0391  00470           RSET2 EQU *
0392  00470 173322R        STA EQT13,I
0393  00471 002400         CLA
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0394  00472 173335R        STA LCHAR,I
0395  00473 173334R        STA PCC,I
0396  00474 173323R        STA EQT14,I  CLEAR LOG
0397  00475 036453R        ISZ RSET
0398  00476 126453R        JMP RSET,I
0399  00477          RSET1  EQU *
0400  00477 060054         LDA P01$     INVALID REQUEST ERROR
0401  00500 016551R        JSB STAT
0402  00501 126453R        JMP RSET,I
0403*
0404*
0405  00502          BACK   EQU *
0406  00502 000000         NOP
0407  00503 072522R        STA BACK1    SAVE DECR VALUE
0408  00504 163317R        LDA EQT10,I
0409  00505 001000         ALS          CONVERT REQUEST TO CHAR, ADDRESS
0410  00506 153321R        CPA EQT12,I  POINTER AT START
0411  00507 126502R        JMP BACK,I   YES
0412  00510 163321R        LDA EQT12,I  NO
0413  00511 042522R        ADA BACK1    DECR ADDRESS
0414  00512 173321R        STA EQT12,I
0415  00513 163322R        LDA EQT13,I
0416  00514 042522R        ADA BACK1    DECR COUNT
0417  00515 173322R        STA EQT13,I
0418  00516 163323R        LDA EQT14,I
0419  00517 042522R        ADA BACK1    DECR LOG
0420  00520 173323R        STA EQT14,I
0421  00521 126502R        JMP BACK,I
0422*
0423  00522 000000   BACK1  NOP
0424*
0425  00523          PUT    EQU *
0426  00523 000000         NOP
0427  00524 167321R        LDB EQT12,I  GET CHAR, ADDRESS
0428  00525 004065         CLE,ERB
0429  00526 002041         SEZ,RSS
0430  00527 026535R        JMP PUT1     LEFT BYTE
0431  00530 073310R        STA STAT1    SAVE CHAR.
0432  00531 160001         LDA B,I      GET PREVIOUS CHAR.
0433  00532 010075         AND LBYT$    SAVE LEFT BYTE
0434  00533 033310R        IOR STAT1    MERGE IN NEW CHAR.
0435  00534 026542R        JMP PUT2
0436  00535          PUT1   EQU *
0437  00535 001727         ALF,ALF
0438  00536 073310R        STA STAT1
0439  00537 160001         LDA B,I
0440  00540 010074         AND RBYT$    PRESERVE RIGHT BYTE
0441  00541 033310R        IOR STAT1    MERGE NEW
0442  00542          PUT2   EQU *
0443  00542 170001         STA B,I      STORE CHAR.
0444  00543 137321R        ISZ EQT12,I  BUMP ADDR.
0445  00544 137323R        ISZ EQT14,I  BUMP LOG
0446  00545 137322R        ISZ EQT13,I  BUMP COUNT
0447  00546 126523R        JMP PUT,I    CONTINUE
0448  00547 036523R        ISZ PUT      DONE
0449  00550 126523R        JMP PUT,I
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0450*
0451*
0452  00551           STAT  EQU *
0453  00551 000000          NOP
0454  00552 073310R         STA STAT1     SAVE STATUS
0455  00553 163315R         LDA EQT4,I
0456  00554 010075          AND LBYT$     KEEP LEFT BYTE
0457  00555 033310R         IOR STAT1     MERGE IN STATUS
0458  00556 173315R         STA EQT4,I
0459  00557 126551R         JMP STAT,I
0460*
0461*
0462  00560           TMCK  EQU *
0463  00560 000000          NOP
0464  00561 006400          CLB
0465  00562 163331R         LDA EQT39,I
0466  00563 000010          SLA           TIMER ACTIVE
0467  00564 006004          INB           YES-IN  CATE CANCEL
0468  00565 001566          ERA,CLE,ELA   CLEAR FLAG
0469  00566 173331R         STA EQT39,I
0470  00567 077307R         STB TIME
0471  00570 126560R         JMP TMCK,I
0472*
0473*
0474  00571           BITCK EQU *
0475  00571 000000          NOP
0476  00572 063305R         LDA SAVA
0477  00573 000000          NOP
0478  00574 001210          RAL,SLA
0479  00575 126571R         JMP BITCK,I   BIT 15
0480  00576 036571R         ISZ BITCK
0481  00577 001210          RAL,SLA
0482  00600 126571R         JMP BITCK,I   BIT 14
0483  00601 036571R         ISZ BITCK
0484  00602 001232          RAL,SLA,RAL
0485  00603 126571R         JMP BITCK,I   BIT 13
0486  00604 036571R         ISZ BITCK
0487  00605 126571R         JMP BITCK,I   NONE
0488*
0001*
0002*
0003  00606 000607R WRITE DEF *+1
0004  00607 000000          NOP
0005  00610 017177R         JSB SETQ
0006  00611 060055          LDA P02$
0007  00612 017132R         JSB LOG
0008  00613 006021          SSB,RSS       INITIATE
0009  00614 026626R         JMP WRIT1     NO
0010  00615 016453R         JSB RSET      YES- SET POINTERS
0011  00616 126607R         JMP WRITE+1,I INVALID LENGTH
0012  00617 006400          CLB
0013  00620 177331R         STB EQT39,I   CLEAR FLAGS
0014  00621 177332R         STB EQT40,I
0015  00622 063342R         LDA NULL      NULL CHAR
0016  00623 033373R         IOR B14$      + START WRITE
0017  00624 036607R         ISZ WRITE+1
```

```
0018  00625 126607R        JMP WRITF+1,I
0019  00626           WRIT1 EQU *
0020  00626 016571R        JSB BITCK     CHECK STATUS
0021  00627 026715R        JMP WRIT2     TIMEOUT
0022  00630 026722R        JMP WRIT3     LINE ERROR
0023  00631 000000         NOP           DATA ERROR
0024  00632 000010         SLA           BREAK?
0025  00633 026724R        JMP WRIT4     YES
0026  00634 016560R        JSB TMCK      NO-CHECK TIMER
0027  00635 163331R        LDA EQT39,I
0028  00636 002020         SSA           FILL IN PROGRESS
0029  00637 026732R        JMP WRIT5     YES
0030  00640 163332R        LDA EQT40,I   NO
0031  00641 017032R        JSB TURN
0032  00642 027013R        JMP WRITD     LAST CHAR WAS TURNAROUND,
0033  00643 006400         CLB
0034  00644 077057R        STB ESCAP     CLR DLE/ESC FLAG
0035  00645 053351R        CPA CR        FILL REQ'D?
0036  00646 026740R        JMP WRIT6     YES
0037  00647 053055R        CPA MTR1      MOTOR ON(UPPER CASE)?
0038  00650 026712R        JMP WRITI     YES
0039  00651 053056R        CPA MTR2      MOTOR ON (LOWER CASE)?
0040  00652 026712R        JMP WRITI     YES
0041  00653 053352R        CPA DLE       DLE ?
0042  00654 073057R        STA ESCAP     YES - SET                 FLAG
0043  00655 053354R        CPA ESC       ESC ?
0044  00656 073057R        STA ESCAP     YES - SET FLAG
0045  00657 163322R WRIT9   LDA EQT13,I   NO
0046  00660 002020         SSA           END OF BUFFER SEQUENCE?
0047  00661 026674R        JMP WRITK     NO
0048  00662 002003         SZA,RSS       DONE
0049  00663 026764R        JMP WRITA     YES-GO O/P CR
0050  00664 050054         CPA P01$      NO- TIME FOR LF
0051  00665 026771R        JMP WRITB     YES
0052  00666 050055         CPA P02$      NO-TIME TO FINISH
0053  00667 027013R        JMP WRITD     YES
0054  00670 050056         CPA P03$      READ REQUESTING WRITE?
0055  00671 026434R        JMP READB     YES
0056  00672 050057         CPA P04$       /LINE TURNAROUND?  4/2/74
0057  00673 027022R        JMP WRITX      /YES-COMPLETE
0058  00674           WRITK EQU *
0059  00674 016775R        JSB GET       NO
0060  00675 053355R        CPA ARROW     BACK ARROW
0061  00676 027013R        JMP WRITD     YES-SKIP CR/LF
0062  00677 067057R        LDB ESCAP
0063  00700 006002         SZB           ESC/DLE FLAG SET?
0064  00701 026705R        JMP WRITH     YES
0065  00702 067307R WRIT8   LDB TIME
0066  00703           WRITG EQU *
0067  00703 036607R        ISZ WRITE+1
0068  00704 126607R        JMP WRITE+1,I
0069  00705           WRITH EQU *
0070  00705 005727         BLF,BLF       POSITION ESC/DLE IN LEFT BYTE
0071  00706 044000         ADB A         FORM 2 CHAR, SEQUENCE
0072  00707 177355R        STB LCHAR,I
0073  00710 177332R        STB EQT40,I
```

```
0074  00711 026702R        JMP WRIT8
0075*
0076  00712           WRITI EQU *
0077  00712 002300          CCE             INDICATE "MOTOR ON"
0078  00713 017067R         JSB FILLC       GET # OF FILL CHAR,
0079  00714 026750R         JMP WRITJ
0080  00715           WRIT2 EQU *
0081  00715 002021          SSA,RSS         LINE ERROR
0082  00716 026773R         JMP WRITF       NO
0083  00717 060057          LDA P04$        SET LINE ERROR STATUS
0084  00720 016551R         JSB STAT
0085  00721 027022R         JMP WRITX
0086  00722           WRIT3 EQU *
0087  00722 017120R         JSB ERRL        PROCESS LINE ERROR
0088  00723 026762R         JMP WRIT7
0089  00724           WRIT4 EQU *
0090  00724 163322R         LDA EQT13,I
0091  00725 050056          CPA P03$        READ REQUESTING WRITE?
0092  00726 026434R         JMP READB       YES-EVERYTHING OK
0093  00727 060056          LDA P03$
0094  00730 016551R         JSB STAT        SET BREAK STATUS
0095  00731 027022R         JMP WRITX
0096  00732           WRIT5 EQU *
0097  00732 137332R         ISZ EQT40,I     LAST FILL
0098  00733 026762R         JMP WRIT7       NO
0099  00734 163331R         LDA EQT39,I     YES
0100  00735 001665          ELA,CLE,ERA     CLEAR FLAG
0101  00736 173331R         STA EQT39,I
0102  00737 026657R         JMP WRIT9
0103  00740           WRIT6 EQU *
0104  00740 000040          CLE             INDICATE CR
0105  00741 017067R         JSB FILLC       GET # OF FILL CHAR,
0106  00742 070001          STA B
0107  00743 163334R         LDA PCC,I
0108  00744 003004          CMA,INA
0109  00745 143323R         ADA EQT14,I     CALCULATE CHAR, COUNT SINCE LAST
0110  00746 003004          CMA,INA
0111  00747 040001          ADA B           CALCULATE REQUIRED #OF FILL>
0112  00750           WRITJ EQU *
0113  00750 167323R         LDB EQT14,I
0114  00751 177334R         STB PCC,I       SET PREVIOUS CHAR, COUNT =CURRENT
0115  00752 002021          SSA,RSS
0116  00753 002003          SZA,RSS         DELAY REQUIRED
0117  00754 026657R         JMP WRIT9       NO
0118  00755 003004          CMA,INA         YES-FORM NAGATIVE COUNT
0119  00756 173332R         STA EQT40,I     SET COUNT
0120  00757 163331R         LDA EQT39,I
0121  00760 033372R         IOR B15$        SET FLAG
0122  00761 173331R         STA EQT39,I
0123  00762           WRIT7 EQU *
0124  00762 063342R         LDA NULL
0125  00763 026702R         JMP WRIT8
0126  00764           WRITA EQU *
0127  00764 063351R         LDA CR          O/P CARRIAGE RETURN
0128  00765           WRITC EQU *
0129  00765 173332R         STA EQT40,I     SAVE PREVIOUS CHAR
```

```
0130  00766 173335R        STA LCHAR,I
0131  00767 137322R        ISZ EQT13,I  BUMP COUNTER
0132  00770 026702R        JMP WRIT8
0133  00771           WRITB EQU *
0134  00771 063350R        LDA LF       O/P LINE FEED
0135  00772 026765R        JMP WRITC
0136*
0137  00773           WRITF EQU *
0138  00773 017060R        JSB OK       CLR TIMER BIT + INDICATE NOP
0139  00774 026703R        JMP WRITG
0140*
0141  00775           GET   EQU *
0142  00775 000000         NOP
0143  00776 167321R        LDB EQT12,I  GET ADDRESS
0144  00777 004065         CLE,ERB
0145  01000 160001         LDA B,I      PICKUP WORD
0146  01001 002041         SEZ,RSS
0147  01002 001727         ALF,ALF      LEFT BYTE
0148  01003 010074         AND RBYTS    RIGHT BYTE
0149  01004 137321R        ISZ EQT12,I  BUMP POINTER
0150  01005 137323R        ISZ EQT14,I  BUMP LOG
0151  01006 137322R        ISZ EQT13,I  BUMP COUNTER
0152  01007 000000         NOP
0153  01010 173332R        STA EQT40,I  SAVE PREVIOUS CHAR.
0154  01011 173335R        STA LCHAR,I
0155  01012 126775R        JMP GET,I
0156*
0157  01013           WRITD EQU *
0158  01013 163333R        LDA EQT41,I
0159  01014 001310         RAR,SLA      AUTO READ
0160  01015 002001         RSS          YES
0161  01016 027022R        JMP WRITX    NO
0162  01017 062607R        LDA WRITE+1
0163  01020 072176R        STA READ+1
0164  01021 026204R        JMP READC
0165*
0166  01022           WRITX EQU *       ADJUST TRANSMISSION LOG
0167  01022 163323R        LDA EQT14,I
0168  01023 167320R        LDB EQT11,I
0169  01024 006020         SSB          WORD COUNT SPECIFIED
0170  01025 027030R        JMP *+3      NO
0171  01026 002004         INA          YES-COUNT PARTIAL WORDS
0172  01027 001100         ARS
0173  01030 173323R        STA EQT14,I
0174  01031 126607R        JMP WRITE+1,I
0175*
0176*
0177*
0178*    CHECK FOR TURNAROUND CHARACTERS
0179  01032           TURN  EQU *
0180  01032 000000         NOP
0181  01033 053344R        CPA ETX
0182  01034 127032R        JMP TURN,I
0183  01035 053345R        CPA EOT
0184  01036 127032R        JMP TURN,I
0185  01037 053346R        CPA ENQ
```

```
0186  01040 127032R        JMP TURN,I
0187  01041 053347R        CPA ACK
0188  01042 127032R        JMP TURN,I
0189  01043 053053R        CPA DLEOT
0190  01044 127032R        JMP TURN,I
0191  01045 053054R        CPA DLE?
0192  01046 127032R        JMP TURN,I
0193  01047 053353R        CPA NAK
0194  01050 127032R        JMP TURN,I
0195  01051 037032R        ISZ TURN
0196  01052 127032R        JMP TURN,I
0197*
0198  01053 010004  DLEOT  OCT 10004
0199  01054 010077  DLE?   OCT 10077
0200  01055 015510  MTR1   OCT 15510
0201  01056 015550  MTR2   OCT 15550
0202  01057 000000  ESCAP  NOP
0203  01060 000000  OK     NOP
0204  01061 163331R        LDA EQT39,I   CLR TIMER IN PROGRESS
0205  01062 001566         ERA,CLE,ELA
0206  01063 173331R        STA EQT39,I
0207  01064 063374R        LDA B13$      INDICATE NOP TO PHYSICAL
0208  01065 006400         CLB           NO TIME REQUEST
0209  01066 127060R        JMP OK,I
0210*****************************************************$$$$$
0211*     ROUTINE TO DETERMINE # OF FILL CHARACTERS
0212*     BASED UPON BAUD RATE
0213*****************************************************$$$$$
0214  01067          FILLC  EQU *
0215  01067 000000         NOP
0216  01070 163327R        LDA EQT21,I
0217  01071 010074         AND RBYT$     ISOLATE BAUD RATE
0218  01072 043100R        ADA FILLT     CALCULATE ADDR IN FILL TABL)
0219  01073 160000         LDA A,I
0220  01074 002040         SEZ           "MOTOR ON"
0221  01075 001727         ALF,ALF       YES-POSITION VALUE
0222  01076 010074         AND RBYT$
0223  01077 127067R        JMP FILLC,I
0224  01100 001100R FILLT  DEF *
0225  01101 002403         OCT 2403      1-110(5,3)
0226  01102 177777         DEC -1        2-134
0227  01103 003405         OCT 3405      3-150(7,5)
0228  01104 177777         DEC -1        4-220
0229  01105 006411         OCT 6411      5-300(13,9)
0230  01106 177777         DEC -1        6-440
0231  01107 177777         DEC -1        7-600
0232  01110 177777         DEC -1        10-880
0233  01111 032044         OCT 32044     11-1200(52,36)
0234                       REP 6         12-17
0235  01112 177777         DEC -1
0235  01113 177777         DEC -1
0235  01114 177777         DEC -1
0235  01115 177777         DEC -1
0235  01116 177777         DEC -1
0235  01117 177777         DEC -1
0236*****************************************************************
```

```
0237*     LINE ERROR PROCESSOR
0238*     INITIATES 2 SECOND TIMER WHEN LINE ERROR FIRST DETECTED
0239*****************************************************************
0240*****************************************************************
0241  01120          ERRL  EQU *
0242  01120 000000         NOP
0243  01121 163331R        LDA EQT39,I
0244  01122 000010         SLA            TIMER IN PROGRESS
0245  01123 002401         CLA,RSS        YES-LET IT RUN
0246  01124 063413R        LDA =D-20      NO-START 2 SECOND TIMER
0247  01125 073307R        STA TIME
0248  01126 163331R        LDA EQT39,I
0249  01127 030054         IOR P01$       SET TIMER IN PROGRESS FLAG
0250  01130 173331R        STA EQT39,I
0251  01131 127120R        JMP ERRL,I
0252*****************************************************************
0253*
0254*     LOG DRIVER ENTRY & BOARD STATUS
0255*
0256  01132          LOG   EQU *
0257  01132 000000         NOP
0258  01133 167336R        LDB EQT44,I
0259  01134 006003         SZB,RSS        TRACE TABLE PRESENT
0260  01135 027172R        JMP LOGX       NO
0261  01136 073313R        STA LOGA       YES
0262  01137 037314R        ISZ SEQ        INCR SEQ COUNTER
0263  01140 000000         NOP
0264  01141 063314R        LDA SEQ
0265  01142 001727         ALF,ALF        POSITION IN LEFT BYTE
0266  01143 010075         AND LBYT$
0267  01144 033313R        IOR LOGA       MERGE IN ID
0268  01145 044057         ADB P04$       BUMP POINTER
0269  01146 177336R        STB EQT44,I
0270  01147 007004         CMB,INB
0271  01150 147324R        ADB EQT18,I
0272  01151 006021         SSB,RSS        END OF TABLE
0273  01152 027155R        JMP LOG1       NO
0274  01153 067414R        LDB =D28       YES
0275  01154 177336R        STB EQT44,I    RESET POINTER
0276  01155          LOG1  EQU *
0277  01155 007400         CCB
0278  01156 147336R        ADB EQT44,I
0279  01157 047324R        ADB EQT18      FORM ENTRY ADDRESS
0280  01160 170001         STA B,I        SEQ/ID
0281  01161 006004         INB
0282  01162 063305R        LDA SAVA       A
0283  01163 170001         STA B,I
0284  01164 006004         INB
0285  01165 063306R        LDA SAVB       B
0286  01166 170001         STA B,I
0287  01167 006004         INB
0288  01170 163330R        LDA EQT25,I    STATUS
0289  01171 170001         STA B,I
0290  01172          LOGX  EQU *
0291  01172 002400         CLA
0292  01173 073307R        STA TIME
```

```
0293  01174 063305R        LDA SAVA
0294  01175 067306R        LDB SAVB
0295  01176 127132R        JMP LOG,I
0296*
0297*      SET EQT LINKS
0298*
0299  01177           SETQ  EQU *
0300  01177 000000          NOP
0301  01200 073305R         STA SAVA
0302  01201 077306R         STB SAVB
0303  01202 060300          LDA EQTB
0304  01203 040056          ADA P03$
0305  01204 053315R         CPA EQT4
0306  01205 127177R         JMP SETQ,I
0307  01206 073315R         STA EQT4
0308  01207 040060          ADA P05$
0309  01210 073316R         STA EQT9
0310  01211 002004          INA
0311  01212 073317R         STA EQT10
0312  01213 002004          INA
0313  01214 073320R         STA EQT11
0314  01215 002004          INA
0315  01216 073321R         STA EQT12
0316  01217 002004          INA
0317  01220 073322R         STA EQT13
0318  01221 002004          INA
0319  01222 073323R         STA EQT14
0320  01223 040056          ADA P03$
0321  01224 160000          LDA A,I
0322  01225           SETQ1 EQU *
0323  01225 073324R         STA EQT18
0324  01226 002004          INA
0325  01227 073325R         STA EQT19
0326  01230 002004          INA
0327  01231 073326R         STA EQT20
0328  01232 002004          INA
0329  01233 073327R         STA EQT21
0330  01234 040057          ADA P04$
0331  01235 073330R         STA EQT25
0332  01236 043301R         ADA P14$
0333  01237 073331R         STA EQT39
0334  01240 002004          INA
0335  01241 073332R         STA EQT40
0336  01242 002004          INA
0337  01243 073333R         STA EQT41
0338  01244 002004          INA
0339  01245 073334R         STA EQT42
0340  01246 002004          INA
0341  01247 073335R         STA EQT43
0342  01250 002004          INA
0343  01251 073336R         STA EQT44
0344  01252 127177R         JMP SETQ,I
0345  01253 000000  SETQI   NOP
0346  01254 073272R         STA IQT18
0347  01255 002004          INA
0348  01256 073273R         STA IQT19
```

```
0349  01257 040055          ADA P02$
0350  01260 073274R         STA IQT21
0351  01261 040057          ADA P04$
0352  01262 073275R         STA IQT25
0353  01263 043415R         ADA =D17
0354  01264 073276R         STA IQT42
0355  01265 002004          INA
0356  01266 073277R         STA IQT43
0357  01267 002004          INA
0358  01270 073300R         STA IQT44
0359  01271 127253R         JMP SETQI,I
0360*
0361  01272 000000  IQT18    NOP
0362  01273 000000  IQT19    NOP
0363  01274 000000  IQT21    NOP
0364  01275 000000  IQT25    NOP
0365  01276 000000  IQT42    NOP
0366  01277 000000  IQT43    NOP
0367  01300 000000  IQT44    NOP
0368*
0369  00000         A        EQU 0
0370  00001         B        EQU 1
0371  01301 000016  P14$     DEC 14
0372  01302 000017  P15$     DEC 15
0373  01303 000020  P16$     DEC 16
0374  01304 000032  P26$     DEC 26
0375  01305 000000  SAVA     NOP
0376  01306 000000  SAVB     NOP
0377  01307 000000  TIME     NOP
0378  01310 000000  STAT1    NOP
0379  01311 000000  COUNT    NOP
0380  01312 000000  HEAD     NOP
0381  01313 000000  LOGA     NOP
0382  01314 000000  SEQ      NOP
0383  01315 000000  EQT4     NOP
0384  01316 000000  EQT9     NOP
0385  01317 000000  EQT10    NOP
0386  01320 000000  EQT11    NOP
0387  01321 000000  EQT12    NOP
0388  01322 000000  EQT13    NOP
0389  01323 000000  EQT14    NOP
0390  01324 000000  EQT18    NOP
0391  01325 000000  EQT19    NOP
0392  01326 000000  EQT20    NOP
0393  01327 000000  EQT21    NOP
0394  01330 000000  EQT25    NOP
0395  01331 000000  EQT39    NOP
0396  01332 000000  EQT40    NOP
0397  01333 000000  EQT41    NOP
0398  01334 000000  EQT42    NOP
0399  01335 000000  EQT43    NOP
0400  01336 000000  EQT44    NOP
0401  01337 000000  RATE     NOP
0402  01335         LCHAR    EQU EQT43
0403  01334         PCC      EQU EQT42
0404  01340 001341R SPEC     DEF *+1
```

```
0405  01341 177763         ABS *-RUB
0406  01342 000000  NULL   OCT 0
0407  01343 000001  CTRLA  OCT 1
0408  01344 000003  ETX    OCT 3
0409  01345 000004  EOT    OCT 4
0410  01346 000005  ENQ    OCT 5
0411  01347 000006  ACK    OCT 6
0412  01350 000012  LF     OCT 12
0413  01351 000015  CR     OCT 15
0414  01352 000020  DLE    OCT 20
0415  01353 000025  NAK    OCT 25
0416  01354 000033  ESC    OCT 33
0417  01355 000137  ARROW  OCT 137
0418  01356 000177  RUB    OCT 177
0419  01357 000036  RS     OCT 36          RECORD SEPERATOR
0420  01360 002522  STOP   OCT 2522        STOP BITS FOR EACH BAUD RATE
0421  01361 001362R PLEX   DEF *+1
0422  01362 000000         OCT 0           0-HALF DUPLEX,
0423  01363 177777         DEC -1
0424  01364 040000         OCT 040000      2-HALF DUPLEX,SEC. CHAN.
0425  01365 177777         DEC -1
0426  01366 100000         OCT 100000      4-FULL DUPLEX
0427  01367 100100         OCT 100100      5-FULL DUPLEX,ECHO
0428  01370 177777         DEC -1
0429  01371 177777         DEC -1
0430*
0431*      BASE PAGE CONSTANTS
0432*
0433  00053          #      EQU 53B
0434  00052          N01$   EQU #-1
0435  00051          N02$   EQU #-2
0436  00050          N03$   EQU #-3
0437  00047          N04$   EQU #-4
0438  00046          N05$   EQU #-5
0439  00045          N06$   EQU #-6
0440  00044          N07$   EQU #-7
0441  00043          N08$   EQU #-8
0442  00042          N09$   EQU #-9
0443  00041          N10$   EQU #-10
0444  00040          N64$   EQU #-11
0445  00053          P00$   EQU #
0446  00054          P01$   EQU #+1
0447  00055          P02$   EQU #+2
0448  00056          P03$   EQU #+3
0449  00057          P04$   EQU #+4
0450  00060          P05$   EQU #+5
0451  00061          P06$   EQU #+6
0452  00062          P07$   EQU #+7
0453  00063          P08$   EQU #+8
0454  00064          P09$   EQU #+9
0455  00065          P10$   EQU #+10
0456  00066          P17$   EQU #+11
0457  00067          P64$   EQU #+12
0458  00070          M17$   EQU #+13
0459  00071          M37$   EQU #+14
0460  00072          M77$   EQU #+15
```

```
0461  00073          M177$ EQU #+16
0462  00074          RBYT$ EQU #+17      OCT 377
0463  00075          LBYT$ EQU #+18      OCT 177400
0464  00076          M3777 EQU #+19      OCT 3777
0465  00077          M1777 EQU #+20      OCT 177700
0466*      BASE PAGE VARIABLES
0467  00202          ##    EQU 202B
0468  00300          EQTB  EQU 300B      ADDRESS OF EQT ENTRY
0469  00203          $EQ1  EQU ##+1
0470  00205          $EQ3  EQU ##+3
0471  00207          $EQ5  EQU ##+5
0472  00210          $EQ6  EQU ##+6
0473  00213          $EQ9  EQU ##+9
0474  00214          $EQ10 EQU ##+10
0475  00220          $EQ14 EQU ##+14
0476  00222          $EQ16 EQU ##+16
0477  00223          $EQ17 EQU ##+17
0478  00230          RQP3  EQU 230B
0479  00231          RQP4  EQU 231B
0480  00271          MPTFL EQU 271B      MEMORY PROTECT FLAG
0481  01372 100000   B15$  OCT 100000
0482  01373 040000   B14$  OCT 40000
0483  01374 020000   B13$  OCT 20000
0484  01375 010000   B12$  OCT 10000
0485  01376 002000   B10$  OCT 2000
0486  01377 001000   B09$  OCT 1000
      01400 000030
      01401 000033
      01402 000047
      01403 000017
      01404 000200
      01405 000077
      01406 000040
      01407 177416
      01410 000010
      01411 177704
      01412 000177
      01413 177754
      01414 000034
      01415 000021
0487                       END
** NO ERRORS*
```

```
 #       00433/02 00434/02 00435/02 00436/02 00437/02 00438/02 00439/02
         00440/02 00441/02 00442/02 00443/02 00444/02 00445/02 00446/02
         00447/02 00448/02 00449/02 00450/02 00451/02 00452/02 00453/02
         00454/02 00455/02 00456/02 00457/02 00458/02 00459/02 00460/02
         00461/02 00462/02 00463/02 00464/02 00465/02

 ##      00467/02 00469/02 00470/02 00471/02 00472/02 00473/02 00474/02
         00475/02 00476/02 00477/02

*$EQ1    00469/02

*$EQ10   00474/02

*$EQ14   00475/02

*$EQ16   00476/02

*$EQ17   00477/02

*$EQ3    00470/02

*$EQ5    00471/02

*$EQ6    00472/02

*$EQ9    00473/02

 .ENTR   00037/01 00049/01

 =B10    ........ 00202/01 00363/01

 =B17    ........ 00087/01

 =B177   ........ 00236/01

 =B17741 ........ 00159/01

 =B200   ........ 00111/01

 =B40    ........ 00150/01

 =B47    ........ 00082/01

 =B77    ........ 00115/01

 =D-20   ........ 00246/02

 =D-60   ........ 00222/01

 =D17    ........ 00353/02

 =D24    ........ 00072/01

 =D27    ........ 00073/01
```

```
 =D28    ........ 00274/02

 A       00369/02 00079/01 00220/01 00071/02 00219/02 00321/02

 ACK     00411/02 00187/02

 ARROW   00417/02 00060/02

 ATD02   00047/01 00004/01 00127/01 00131/01

 B       00370/02 00055/01 00058/01 00061/01 00064/01 00066/01 00068/01
         00218/01 00234/01 00432/01 00439/01 00443/01 00106/02 00111/02
         00145/02 00280/02 00283/02 00286/02 00289/02

*B09$    00486/02

*B10$    00485/02

*B12$    00484/02

 B13$    00483/02 00207/02

 B14$    00482/02 00196/01 00330/01 00016/02

 B15$    00481/02 00208/01 00272/01 00121/02

 BACK    00405/01 00346/01 00353/01 00411/01 00421/01

 BACK1   00423/01 00407/01 00413/01 00416/01 00419/01

 BAD     00129/01 00081/01 00101/01

 BITCK   00474/01 00226/01 00479/01 00480/01 00482/01 00483/01 00485/01
         00486/01 00487/01 00020/02

 CNTL1   00174/01 00139/01

 CNTL4   00171/01 00152/01 00156/01 00176/01

 CNTL5   00162/01 00147/01

 CNTL6   00153/01 00149/01

 CNTL7   00157/01 00151/01

 CONTL   00133/01 00060/01 00161/01 00172/01 00173/01

*COUNT   00379/02

 CR      00413/02 00250/01 00035/02 00127/02

 CTRLA   00407/02 00248/01

 DLE     00414/02 00041/02

 DLE?    00199/02 00191/02
```

```
DLEOT   00198/02 00189/02

ENQ     00410/02 00185/02

EOT     00409/02 00183/02

EQT10   00385/02 00158/01 00163/01 00166/01 00381/01 00408/01 00311/02

EQT11   00386/02 00332/01 00384/01 00168/02 00313/02

EQT12   00387/02 00383/01 00410/01 00412/01 00414/01 00427/01 00444/01
        00143/02 00149/02 00315/02

EQT13   00388/02 00191/01 00253/01 00324/01 00392/01 00415/01 00417/01
        00446/01 00045/02 00090/02 00131/02 00151/02 00317/02

EQT14   00389/02 00141/01 00283/01 00320/01 00337/01 00340/01 00349/01
        00355/01 00396/01 00418/01 00420/01 00445/01 00109/02 00113/02
        00150/02 00167/02 00173/02 00319/02

EQT18   00390/02 00271/02 00279/02 00323/02

EQT19   00391/02 00325/02

EQT20   00392/02 00327/02

EQT21   00393/02 00216/02 00329/02

EQT25   00394/02 00288/02 00331/02

EQT39   00395/02 00193/01 00206/01 00213/01 00256/01 00271/01 00273/01
        00280/01 00282/01 00295/01 00297/01 00317/01 00319/01 00326/01
        00465/01 00469/01 00013/02 00027/02 00099/02 00101/02 00120/02
        00122/02 00204/02 00206/02 00243/02 00248/02 00250/02 00333/02

EQT4    00383/02 00455/01 00458/01 00305/02 00307/02

EQT40   00396/02 00327/01 00014/02 00030/02 00073/02 00097/02 00119/02
        00129/02 00153/02 00335/02

EQT41   00397/02 00155/01 00160/01 00201/01 00214/01 00287/01 00302/01
        00362/01 00158/02 00337/02

EQT42   00398/02 00339/02 00403/02

EQT43   00399/02 00341/02 00402/02

EQT44   00400/02 00258/02 00269/02 00275/02 00278/02 00343/02

EQT9    00384/02 00142/01 00309/02

EQTB    00468/02 00303/02

ERRL    00241/02 00314/01 00087/02 00251/02
```

ESC 00416/02 00043/02

ESCAP 00232/02 00034/02 00042/02 00044/02 00062/02

ETX 00408/02 00168/01 00194/01 00242/01 00181/02

EXEC 00007/01 00120/01

FILLC 00214/02 00078/02 00105/02 00223/02

FILLT 00224/02 00218/02

G1200 00041/01 00005/01

GET 00141/02 00059/02 00155/02

*HEAD 00380/02

*HXXXX 00043/01

IQT18 00361/02 00071/01 00346/02

IQT19 00362/02 00083/01 00109/01 00112/01 00348/02

IQT21 00363/02 00091/01 00350/02

IQT25 00364/02 00119/01 00352/02

IQT42 00365/02 00354/02

IQT43 00366/02 00356/02

IQT44 00367/02 00075/01 00358/02

IXT 00045/01 00051/01 00069/01

LBYT$ 00463/02 00433/01 00456/01 00266/02

LCHAR 00402/02 00169/01 00187/01 00195/01 00329/01 00394/01 00072/02
00130/02 00154/02

LF 00412/02 00244/01 00134/02

LINE 00044/01 00076/01 00084/01

LOG 00256/02 00137/01 00183/01 00007/02 00295/02

LOG1 00276/02 00273/02

LOGA 00381/02 00261/02 00267/02

LOGX 00290/02 00260/02

LU 00042/01 00050/01 00114/01 00117/01 00123/01

*M17$ 00458/02

*M177$ 00461/02

*M1777 00465/02

*M37$ 00459/02

*M3777 00464/02

M77$ 00460/02 00145/01

*MPTFL 00480/02

MTR1 00200/02 00037/02

MTR2 00201/02 00039/02

N01$ 00434/02 00080/01 00352/01

*N02$ 00435/02

N03$ 00436/02 00318/01

*N04$ 00437/02

*N05$ 00438/02

*N06$ 00439/02

*N07$ 00440/02

*N08$ 00441/02

*N09$ 00442/02

*N10$ 00443/02

*N64$ 00444/02

NAK 00415/02 00193/02

NULL 00406/02 00240/01 00328/01 00015/02 00124/02

OK 00203/02 00366/01 00138/02 00209/02

P00$ 00445/02 00124/01

P01$ 00446/02 00093/01 00130/01 00167/01 00212/01 00400/01 00050/02
00249/02

P02$ 00447/02 00146/01 00296/01 00369/01 00006/02 00052/02 00349/02

P03$ 00448/02 00095/01 00122/01 00148/01 00165/01 00190/01 00054/02
00091/02 00093/02 00304/02 00320/02

P04$ 00449/02 00053/01 00288/01 00303/01 00310/01 00323/01 00056/02

```
        00083/02 00268/02 00330/02 00351/02

 P05$   00450/02 00097/01 00308/02

*P06$   00451/02

 P07$   00452/02 00077/01

*P08$   00453/02

 P09$   00454/02 00099/01

*P10$   00455/02

 P14$   00371/02 00332/02

 P15$   00372/02 00062/01

 P16$   00373/02 00373/01

*P17$   00456/02

*P26$   00374/02

 P64$   00457/02 00116/01

 PCC    00403/02 00284/01 00286/01 00291/01 00342/01 00350/01 00395/01
        00187/02 00114/02

 PLEX   00421/02 00078/01

 PUT    00425/01 00262/01 00447/01 00448/01 00449/01

 PUT1   00436/01 00430/01

 PUT2   00442/01 00435/01

 RATE   00401/02 00088/01 00090/01 00092/01 00104/01

 RBYT$  00462/02 00126/01 00216/01 00440/01 00148/02 00217/02 00222/02

 READ   00179/01 00054/01 00200/01 00209/01 00210/01 00277/01 00278/01
        00338/01 00359/01 00163/02

 READ1  00225/01 00185/01

 READ2  00307/01 00227/01

 READ3  00313/01 00228/01

 READ4  00316/01 00243/01 00266/01

 READ5  00274/01 00197/01 00241/01 00255/01 00258/01 00260/01 00267/01
        00269/01 00298/01 00301/01 00306/01 00315/01 00331/01 00344/01
        00351/01 00354/01
```

```
 READ6   00339/01 00247/01
 READ7   00348/01 00249/01
 READ8   00268/01 00251/01
 READ9   00332/01 00356/01
 READB   00357/01 00055/02 00092/02
 READC   00186/01 00322/01 00360/01 00164/02
 READD   00361/01 00309/01
 READE   00276/01 00367/01
 READF   00372/01 00229/01
 READG   00230/01 00375/01
 READH   00198/01 00189/01
 READI   00270/01 00347/01
 READJ   00279/01 00245/01
 READK   00261/01 00294/01
 READL   00295/01 00290/01 00305/01
 READM   00299/01 00285/01
 READN   00211/01 00204/01
 READP   00207/01 00223/01
 READQ   00368/01 00365/01
 READR   00252/01 00239/01
 READX   00355/01 00312/01 00371/01
*RQP3    00478/02
*RQP4    00479/02
 RS      00419/02 00293/01
 RSET    00377/01 00199/01 00397/01 00398/01 00402/01 00010/02
 RSET1   00399/01 00386/01
 RSET2   00391/01 00388/01
 RUB     00418/02 00246/01 00405/02
```

```
 SAVA    00375/02 00233/01 00237/01 00264/01 00476/01 00282/02 00293/02
         00301/02

 SAVB    00376/02 00285/02 00294/02 00302/02

 SEQ     00382/02 00262/02 00264/02

 SETQ    00299/02 00135/01 00181/01 00005/02 00306/02 00344/02

*SETQ1   00322/02

 SETQI   00345/02 00070/01 00359/02

 SPEC    00404/02 00118/01

 STAT    00452/01 00311/01 00370/01 00374/01 00380/01 00401/01 00459/01
         00084/02 00094/02

 STAT1   00378/02 00431/01 00434/01 00438/01 00441/01 00454/01 00457/01

 STOP    00420/02 00103/01

 TIME    00377/02 00275/01 00470/01 00065/02 00247/02 00292/02

 TLD1    00102/01 00094/01 00096/01 00098/01 00100/01

*TLD2    00113/01

 TMCK    00462/01 00232/01 00471/01 00026/02

 TURN    00179/02 00188/01 00265/01 00031/02 00182/02 00184/02 00186/02
         00188/02 00190/02 00192/02 00194/02 00195/02 00196/02

 WRIT1   00019/02 00009/02

 WRIT2   00080/02 00021/02

 WRIT3   00086/02 00022/02

 WRIT4   00089/02 00025/02

 WRIT5   00096/02 00029/02

 WRIT6   00103/02 00036/02

 WRIT7   00123/02 00088/02 00098/02

 WRIT8   00065/02 00074/02 00125/02 00132/02

 WRIT9   00045/02 00102/02 00117/02

 WRITA   00126/02 00049/02

 WRITB   00133/02 00051/02

 WRITC   00128/02 00135/02
```

```
WRITD   00157/02 00032/02 00053/02 00061/02

WRITE   00003/02 00057/01 00358/01 00011/02 00017/02 00018/02 00067/02
        00068/02 00162/02 00174/02

WRITF   00137/02 00082/02

WRITG   00066/02 00139/02

WRITH   00069/02 00064/02

WRITI   00076/02 00038/02 00040/02

WRITJ   00112/02 00079/02

WRITK   00058/02 00047/02

WRITX   00166/02 00057/02 00085/02 00095/02 00161/02

X1      00125/01 00052/01
```